

## A model for C<sub>2</sub>H<sub>2</sub> chemisorption on carbon-black active sites

의상엽, 곽정훈, 윤기준\*

성균관대학교

(kijyoon@skku.edu\*)

In order to characterize the catalytically active sites on carbon black, acetylene chemisorption had been examined recently at 773 and 873 K by using a pulse technique. Reasonable models for associative acetylene chemisorption at 773 K and constant acetylene consumption at 873 K on the armchair face at the edges of graphene layers had also been proposed. The constant consumption may be explained by the “C<sub>2</sub>H<sub>2</sub>-addition-hydrogen-abstraction(CAHA)” mechanism. As a continued work, acetylene chemisorption on used carbon blacks after the methane decomposition reaction was investigated by following the same experimental procedure. The change of acetylene chemisorption with the amount of carbon deposition was discussed in regard of the stable activity of carbon black in methane decomposition. In addition, models for these chemisorption processes on the zigzag face and corners were proposed.